No. 200600060

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Minnesota Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) MAY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Ulen'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this fifth day of July, in the year two thousand and six.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
Minnesota Agricultural Experiment Station

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
MN97803-A

3. VARIETY NAME
Ulen

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
277 Coffey Hall
1420 Eckles Ave.
University of Minnesota
St. Paul, MN 55108

5. TELEPHONE *(include area code)*
(612) 624-2299

6. FAX *(include area code)*
(612) 625-1260

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PVPO NUMBER
20060060

FILING DATE
JAN. 9, 2006

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
University

8. IF INCORPORATED, GIVE STATE OF INCORPORATION

9. DATE OF INCORPORATION

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
James A. Anderson
Dept. of Agronomy & Plant Genetics
411 Borlaug Hall
1991 Buford Circle
University of Minnesota
St. Paul, MN 55108

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 4382.00
DATE 01-09-2006

CERTIFICATION FEE:
$ 768.00
DATE 06-15-2006

11. TELEPHONE *(Include area code)*
(612) 625-9763

12. FAX *(Include area code)*
(612) 625-1268

13. E-MAIL
ander319@umn.edu

14. CROP KIND *(Common Name)*
Wheat

16. FAMILY NAME *(Botanical)*
Gramineae

15. GENUS AND SPECIES NAME OF CROP
Triticum aestivum

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☑ NO

18. DOES THE VARIETY CONTAIN ANY TRANSGENES? *(OPTIONAL)*
☐ YES ☑ NO
IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERICALIZATION. _____

19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED
(Follow instructions on reverse)

a. ☑ Exhibit A. Origin and Breeding History of the Variety
b. ☑ Exhibit B. Statement of Distinctness
c. ☑ Exhibit C. Objective Description of Variety
d. ☑ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☑ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ☑ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☑ Filing and Examination Fee ($3,652), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☑ YES *(If "yes", answer items 21 and 22 below)* ☐ NO *(If "no", go to item 23)*

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES?
☑ YES ☐ NO
IF YES, WHICH CLASSES? ☒ FOUNDATION ☒ REGISTERED ☒ CERTIFIED

22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☑ YES ☐ NO
IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS.
☒ FOUNDATION ☒ REGISTERED ☒ CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☑ YES ☐ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☑ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER	SIGNATURE OF OWNER
NAME *(Please print or type)*: Beverly R. Durgan	NAME *(Please print or type)*: Beverly R. Durgan
CAPACITY OR TITLE: Associate Director, MN Experiment Station	CAPACITY OR TITLE: Associate Director, MN Experiment Station
DATE: 01/04/06	DATE: 01/04/06

(See reverse for instructions and information collection burden statement)

ST-470 (04-03) designed by the Plant Variety Protection Office using Word 2002.

INSTRUCTIONS

20060060

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $3,652 ($432 filing fee and $3,220 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office
Telephone: (301) 504-5518
FAX: (301) 504-5291
Homepage: http://www.ams.usda.gov/science/pvpo/pvp.htm

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that name has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, 10301 Baltimore Avenue, Suite 401 NAL Building, Beltsville, MD 20705. Telephone: (301) 504-5682 http://www.ams.usda.gov/lsg/seed.htm.

ITEM

19a. Give:
(1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

20. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

23. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

24. *See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.*

22. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

Two generations of Certified Seed production are allowed under emergency situations with the consent of the originating breeder or institution.

23. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

First date of sale was March 18, 2005 in U.S. for certified seed production.

24. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

EXHIBIT A – ORIGIN AND BREEDING HISTORY

'ULEN'

Selection Criteria:

Pedigree: MN92044/HJ98

1994:Cross was made and F1 generation grown in University of Minnesota greenhouses in St. Paul, MN .

1995: F2 space-plant population population; University of Minnesota research land; segregating for maturity, plant height, and disease resistance, leaf and stem rust resistant plants selected; F3 single seed descent generation advance, University of Minnesota greenhouse. No selection applied.

1996: F4 head row (F3-derived); University of Minnesota research land; selected based on appropriate plant height, maturity, and leaf and stem rust resistance.

1997: F5 seed increase from a single spike from the F4 row grown in Arizona during the winter; no segregation observed within the single row.

1997: F6 Preliminary Yield Trial (tested as MN97803); University of Minnesota research land; selected based on appropriate plant height, maturity, field resistance to leaf and stem rust, grain protein content, test weight, grain yield, milling and baking quality; no segregation noted.

1998: F7 Advanced Yield Trial, University of Minnesota research land; selected based on appropriate plant height, maturity, field resistance to leaf and stem rust, Fusarium head blight resistance, grain protein content, test weight, grain yield, milling and baking quality; no segregation noted.

1999: Advanced Yield Trial (7 locations), University of Minnesota research land; selected based on appropriate plant height, maturity, field resistance to leaf and stem rust, Fusarium head blight resistance, grain protein content, test weight, grain yield, milling and baking quality; no segregation noted.

2000: Statewide Variety Trial (7 locations), University of Minnesota research land, Uniform Regional Performance Nursery; selected based on appropriate plant height, maturity, field resistance to leaf and stem rust, Fusarium head blight resistance, grain protein content, test weight, grain yield, milling and baking quality; Approximately 1% tall plants observed. 100 random heads selected for purification and grown in Arizona winter nursery, 95 rows were selected based on uniformity of height among and within rows.

2001: Statewide Variety Trial (7 locations), University of Minnesota research land, Uniform Regional Performance Nursery; selected based on appropriate plant height, maturity, field resistance to leaf and stem rust, Fusarium head blight resistance, grain protein content, test weight, grain yield, milling and baking quality; the 95 head selection harvested from Arizona

were evaluated for uniformity and reaction to leaf rust, stem rust, and Fusarium head blight; 61 of the 95 selections were retained based on uniformity of heading date, height, and straw strength. No segregation among the 95 lines was observed for any diseases tested. Equal amounts of seed of each were bulked together and designated as MN97803-A.

2002: Statewide Variety Trial (7 locations) including both MN97803 and MN97803-A, University of Minnesota research land; selected based on appropriate plant height, maturity, field resistance to leaf and stem rust, Fusarium head blight resistance, grain protein content, test weight, grain yield, milling and baking quality; 1,000 kg of breeder seed of MN97803-A produced by Minnesota Crop Improvement Association.

2003: Statewide Variety Trial (7 locations), University of Minnesota research land; selected based on appropriate plant height, maturity, field resistance to leaf and stem rust, Fusarium head blight resistance, grain protein content, test weight, grain yield, milling and baking quality; approximately 16,000 kg of foundation seed was produced by Minnesota Crop Improvement Association at one Minnesota location.

2004: Statewide Variety Trial (7 locations), University of Minnesota research land; selected based on appropriate plant height, maturity, field resistance to leaf and stem rust, Fusarium head blight resistance, grain protein content, test weight, grain yield, milling and baking quality; approximately 190,000 kg of registered seed was produced by Minnesota Crop Improvement Association at 3 Minnesota locations.

2005: MN97803-A released as 'Ulen' on January 14, 2005.

Evidence of Uniformity and Stability:

Ulen has been stable since purification and formation of MN97803-A in 2001. Approximately 3 in 10,000 plants are more than 10 cm taller and are considered naturally occurring variants.

EXHIBIT B. – NOVELTY STATEMENT

When grown with other hard red spring wheat varieties in its area of adaptation, Ulen can be readily distinguished from other varieties by its combination of maturity, plant height, and reaction to leaf rust.

On the basis of genetic relationship and overall plant architecture, Ulen is most similar to HJ98. Ulen differs from HJ98 in having the 2* high molecular weight subunit at the *Glu*-1A locus, vs the 1 subunit for HJ98. The high molecular weight glutenin alleles are summarized in Table 1 below.

Table 1. High molecular weight glutenin allele composition of 'Ulen' and 'HJ98'. Allele nomenclature is according to Payne et al. 1980. Theor. Appl. Genet. 58:113-120.

	Chromosome		
Variety	1A	1B	1D
Ulen	2*	7+9	5+10
HJ98	1	7+9	5+10

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Wheat (*Triticum* spp.)

NAME OF APPLICANT (S)	TEMPORARY OR EXPERIMENTAL DESIGNATION	VARIETY NAME
Minnesota Agricultural Experiment Station	MN97803-A	Ulen 20060060

ADDRESS *(Street and No. or RD No., City, State, Zip Code and Country)*

277 Coffey Hall
1420 Eckles Ave.
St. Paul, MN 55108

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PVPO NUMBER

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g., [0][9][9] or [0][9]) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: _____. Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

[1]
1 = Common
2 = Durum
3 = Club
4 = Other (Specify) _____

2. VERNALIZATION:

[1]
1 = Spring
2 = Winter
3 = Other (Specify) _____

3. COLEOPTILE ANTHOCYANIN:

[1] 1 = Absent 2 = Present

4. JUVENILE PLANT GROWTH:

[3] 1 = Prostrate 2 = Semi-erect 3 = Erect

5. PLANT COLOR: (boot stage)

[2]
1 = Yellow-Green
2 = Green
3 = Blue-Green

6. FLAG LEAF: (boot stage)

[2] 1 = Erect 2 = Recurved
[2] 1 = Not Twisted 2 = Twisted
[1] 1 = Wax Absent 2 = Wax Present

7. EAR EMERGENCE:

[0][6][6] Number of Days (Average)
[0][2] Number of Days Earlier Than * HJ98
Same As * Oklee
[0][1] Number of Days Later Than * Briggs

**Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial*

8. ANTHER COLOR:

[1] 1 = Yellow 2 = Purple

9. PLANT HEIGHT: (from soil to top of head, excluding awns)

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[0][9][6] cm (Average)

[0][5] cm Taller Than HJ98 *

Same As Walworth *

[1][1] cm Shorter Than Parshall *

10. STEM:

A. ANTHOCYANIN

[1] 1 = Absent 2 = Present

B. WAXY BLOOM

[1] 1 = Absent 2 = Present

C. HAIRINESS (last internode of rachis)

[1] 1 = Absent 2 = Present

D. INTERNODE

[1] 1 = Hollow 2 = Semi-solid 3 = Solid

[4] Number of Nodes

E. PEDUNCLE

[1] 1 = Erect 2 = Recurved 3 = Semi-erect

[3][4] cm Length

F. AURICLE

[1] Anthocyanin: 1 = Absent 2 = Present

[1] Hair: 1 = Absent 2 = Present

11. HEAD: (At Maturity)

A. DENSITY

[2] 1 = Lax
2 = Middense (Laxidense)
3 = Dense

B. SHAPE

[1] 1 = Tapering
2 = Strap
3 = Clavate
4 = Other (Specify) _____

C. CURVATURE

[2] 1 = Erect
2 = Inclined
3 = Recurved

D. AWNEDNESS

[4] 1 = Awnless
2 = Apically Awnletted
3 = Awnletted
4 = Awned

12. GLUMES: (At Maturity)

A. COLOR

[1] 1 = White
2 = Tan
3 = Other (Specify) _____

B. SHOULDER

[2] 1 = Wanting 2 = Oblique
3 = Rounded 4 = Square
5 = Elevated 6 = Apiculate
7 = Other (Specify) _____

C. SHOULDER WIDTH

[2] 1 = Narrow
2 = Medium
3 = Wide

D. BEAK

[3] 1 = Obtuse
2 = Acute
3 = Acuminate

E. BEAK WIDTH

[2] 1 = Narrow
2 = Medium
3 = Wide

F. GLUME LENGTH

[3] 1 = Short (ca. 7mm)
2 = Medium (ca. 8mm)
3 = Long (ca. 9mm)

G. WIDTH

[1] 1 = Narrow (ca. 3mm)
2 = Medium (ca. 3.5mm)
3 = Long (ca. 4mm)

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13. SEED:

A. SHAPE

[1] 1 = Ovate
2 = Oval
3 = Elliptical

B. CHEEK

[2] 1 = Rounded
2 = Angular

C. BRUSH

[2] 1 = Short
2 = Medium
3 = Long

1 = Not Collared
2 = Collared

D. CREASE

[1] 1 = Width 60% or less of Kernel
2 = Width 80% or less of Kernel
3 = Width Nearly as Wide as Kernel

[2] 1 = Depth 20% or less of Kernel
2 = Depth 35% or less of Kernel
3 = Depth 50% or less of Kernel

E. COLOR

[3] 1 = White
2 = Amber
3 = Red
4 = Other (Specify) _____

F. TEXTURE

[1] 1 = Hard
2 = Soft
3 = Other (Specify) _____

G. PHENOL REACTION (See Instructions)

[0] 1 = Ivory
2 = Fawn
3 = Light Brown
4 = Dark Brown
5 = Black

H. SEED WEIGHT

[3][3] g/1000 Seed (Whole number only)

I. GERM SIZE

[3] 1 = Small
2 = Midsize
3 = Large

14. DISEASE: PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

(0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

[2]	Stem Rust (*Puccinia graminis* f. sp. *tritici*)	[2]	Leaf Rust (*Puccinia recondita* f. sp. *tritici*)
[2]	Stripe Rust (*Puccinia striiformis*)	[0]	Loose Smut (*Ustilago tritici*)
[3]	Tan Spot (*Pyrenophora tritici-repentis*)	[0]	Flag Smut (*Urocystis agropyri*)
[0]	Halo Spot (*Selenophoma donacis*)	[0]	Common Bunt (*Tilletia tritici* or T. *laevis*)
[0]	*Septoria nodorum* (Glume Blotch)	[0]	Dwarf Bunt (*Tilletia controversa*)
[0]	*Septoria avenae* (Speckled Leaf Disease)	[0]	Karnal Bunt (*Tilletia indica*)
[1]	*Septoria tritici* (Speckled Leaf Blotch)	[0]	Powdery Mildew (*Erysiphe graminis* f. sp. *tritici*)
[1]	Scab (*Fusarium* spp.)	[0]	"Snow Molds"
[2]	"Black Point" (Kernel Smudge)	[0]	Common Root Rot (*Fusarium*, *Cochliobolus* and *Bipolaris* spp.)
[0]	Barley Yellow Dwarf Virus (BYDV)	[0]	Rhizoctonia Root Rot (*Rhizoctonia solani*)
[0]	Soilborne Mosaic Virus (SBMV)	[2]	Black Chaff (*Xanthomonas campestris* pv. *translucens*).
[0]	Wheat Yellow (Spindle Streak) Mosaic Virus	[0]	Bacterial Leaf Blight (*Pseudomonas syringae* pv. *syringae*)
[0]	Wheat Streak Mosaic Virus (WSMV)	[ ]	Other (Specify) _____
[ ]	Other (Specify) _____	[ ]	Other (Specify) _____
[ ]	Other (Specify) _____	[ ]	Other (Specify) _____
[ ]	Other (Specify) _____	[ ]	Other (Specify) _____

15. INSECT: (0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

PLEASE SPECIFY BIOTYPE (where needed)

[0]	Hessian Fly (*Mayetiola destructor*)	[ ]	Other (Specify) _____
[0]	Stem Sawfly (*Cephus* spp.)	[ ]	Other (Specify) _____
[0]	Cereal Leaf Beetle (*Oulema melanopa*)	[ ]	Other (Specify) _____

15. INSECT: (continued) 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant 20060060

PLEASE SPECIFY BIOTYPE (Where Needed)

0	Russian Aphid (*Diuraphis noxia*)		Other (Specify) _____
0	Greenbug (*Schizaphis graminum*)		Other (Specify) _____
0	Aphids		Other (Specify) _____

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS:

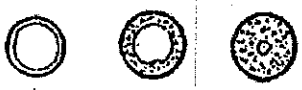
WHEAT DESCRIPTOR ILLUSTRATIONS

Section Numbers Correspond to the Numbers of the Sections on the Form

4. EARLY PLANT GROWTH HABIT:

1 Prostrate 2 Intermediate 3 Erect

10. STEM INTERNODE X-SECTION:



1 Hollow 2 Semi-solid 3 Solid

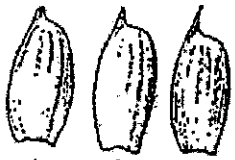
11. SPIKE SHAPE:

1 Tapering 2 Oblong 3 Clavate 4 Elliptical

11. AWNEDNESS:

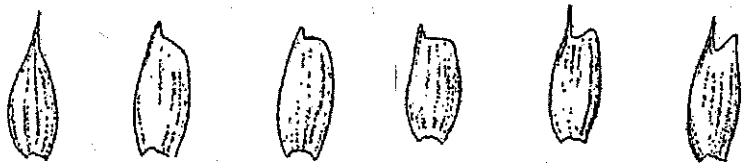
1 Awnless 2 Apically Awnleted 3 Awnleted 4 Awned

12. BEAK SHAPE:



1 Obtuse 2 Acute 3 Acuminate

12. SHOULDER SHAPE:



1 Wanting 2 Oblique 3 Rounded 4 Square 5 Elevated 6 Apiculate

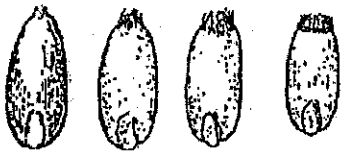
13. SEED SHAPE:

1 Ovate 2 Oval 3 Elliptical

13. CHEEK SHAPE:

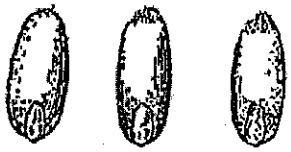
1 Rounded 2 AngulaR

13. BRUSH SIZE



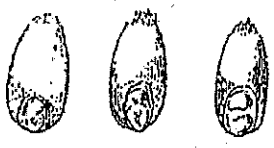
1 Small 2 Midsized 3 Large 4 Collared

13. BRUSH HAIR LENGTH:



1 Short 2 Medium 3 Long

13. GERM (EMBRYO) SIZE:



1 Small 2 Midsized 3 Large

13. SEED CREASE WIDTH:

1 Narrow 2 Mid-wide 3 Wide

13. SEED CREASE DEPTH:

1 Shallow 2 Mid-Deep 3 Deep

EXHIBIT D. – ADDITIONAL DESCRIPTION OF VARIETY

Table 1. Agronomic characteristics of Ulen and selected varieties.

Variety	Origin	Days to Heading[1]	Height cm[1]	Lodging (0-9) 2 yr	3 yr	5 yr	Leaf rust rating
Alsen	2000 NDSU	67.1	92.1	0.05	0.36	0.92	MR
Briggs	2002 SDSU	65.3	92.3	2.19	2.17		R
Granger	2004 SDSU	66.3	102.1	1.9			MR
Granite	2002 Westbred	71	89.6	0	0.14		MS
HJ98	1998 MN	68.3	91.4	1.38	1.97	2.66	MS
Knudson	2001 AgriPro	68.3	93.5	0.71	1.22		R
Oklee	2003 MN	65.6	89.3	1.33	1.69	1.76	MR-MS
Oxen	1995 SDSU	66.5	93.1	1	1.25	1.94	MS-S
Reeder	1999 NDSU	67.6	98.9	0.33	0.83	1.3	MS-S
Steele-ND	2004 NDSU	67.5	98.1	1.48			R
Ulen	**2005 MN**	**66**	**96**	**1.1**	**1.83**	**2.45**	MR
Walworth	2001 SDSU	65.4	96	2.24	2.53	3.23	MS
Mean		67.1	94.4	1.1	1.4	2	

1. 2004 data.

EXHIBIT D. – ADDITIONAL DESCRIPTION OF VARIETY, CONTINUED

Table 2. Grain Quality of Ulen and selected cultivars, 2001–2003. Data from USDA–ARS Quality Lab, Fargo and is an average of 12 site-years.[1]

	Test	Large	1000	NIR	Wheat		Flour	Mixograph			Bake						Loaf
Cultivar	Wt lb/bu	Kernels %	KWT mg	Hard-ness	Protein 14%mb	FN (sec)	Protein 14%mb	ABS (%)	Score (1–9)	Peak (min)	Mix (min)	Abs (%)	Rating Scores[2] DC	CC	CG	CT	Vol cc
Alsen	61.9	69.6	30.4	69.0	14.8	404.5	13.8	59.6	3.70	4.7	3.5	62.8	2.9	3.5	3.8	4.8	206.6
HJ98	59.6	39.4	27.1	58.6	13.6	419.1	12.5	57.3	3.50	6.6	3.9	61.2	2.9	3.7	4.7	4.6	202.7
Knudson	61.4	57.0	30.1	71.4	13.8	393.4	12.5	57.8	4.30	6.7	3.6	60.7	3.0	3.4	3.6	4.7	193.8
Oklee	61.0	53.7	29.5	59.2	13.9	439.9	13.0	56.2	2.28	4.1	2.9	56.1	2.9	3.5	4.3	4.5	198.0
Oxen	59.8	57.2	29.0	69.2	13.8	398.9	12.4	57.0	3.40	5.6	3.3	62.0	2.9	4.0	3.9	4.7	201.7
Reeder	61.2	67.2	30.8	61.7	14.5	419.3	13.5	57.5	2.93	4.7	2.9	59.0	2.8	3.4	4.0	4.9	204.4
Ulen	**60.8**	**71.8**	**32.3**	**64.7**	**14.6**	**401.4**	**13.4**	**58.3**	**3.23**	**4.3**	**2.9**	**59.3**	**2.9**	**4.3**	**4.2**	**5.0**	**210.7**
Walworth	59.6	57.7	28.5	60.9	14.2	396.1	13.0	57.1	3.47	7.1	4.3	57.2	2.9	3.4	4.2	3.9	202.9

1. Higher numbers are desirable for all traits, except mixing time where a low to intermediate number is preferred,
2. DC=dough characteristics; CC=crumb color; CG=crumb grain; CT=crumb texture;
higher numbers are better except for DC when 3 is best.

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued *(7 U.S.C. 2421)*. The information is held confidential until the certificate is issued *(7 U.S.C. 2426)*.

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Minnesota Agricultural Experiment Station	MN97803-A	Ulen
4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	**5. TELEPHONE** *(Include area code)*	**6. FAX** *(Include area code)*
277 Coffey Hall 1420 Eckles Ave. University of Minnesota St. Paul, MN 55108	(612) 624-2299	(612) 625-1260
	7. PVPO NUMBER 200600060	

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.** ☑ **YES** ☐ **NO**

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? **If no, give name of country.** ☑ **YES** ☐ **NO**

10. Is the applicant the original owner? ☑ **YES** ☐ **NO** **If no, please answer one of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?
☐ **YES** ☐ **NO** **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?
☐ **YES** ☐ **NO** **If no, give name of country**

11. Additional explanation on ownership *(Trace ownership from original breeder to current owner. Use the reverse for extra space if needed)*:

Dr. James A. Anderson, an employee of the University of Minnesota is the lead plant breeder who developed 'Ulen' the hard red spring wheat cultivar for which Plant Variety Protection is hereby sought. The employee by agreement and because of the condition of the use of facilities and funds of the University of Minnesota has assigned all ownership right to 'Ulen' hard red spring wheat to the University of Minnesota.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.